

WHAT IS CLAIMED IS:

1. A medical apparatus for remodeling a mitral valve annulus adjacent to the coronary sinus, comprising:

an elongate body, having a proximal end region and a distal end region, each of the proximal and distal end regions dimensioned to reside completely within the vascular system, the elongate body being movable from a first configuration for transluminal delivery to at least a portion of the coronary sinus to a second configuration for remodeling the mitral valve annulus proximate the coronary sinus; and

a forming element attached to the elongate body for manipulating the elongate body from the first transluminal configuration to the second remodeling configuration;

wherein the elongate body comprises a tube having a plurality of transverse slots therein.

2. A medical apparatus as in Claim 1, wherein the elongate body forms an arc when in the remodeling configuration, by changing the shape of the slots.

3. A medical apparatus as in Claim 2, wherein a best fit constant radius curve corresponding to the arc has a radius within the range of from about 10 mm to about 20 mm.

4. A medical apparatus as in Claim 1, further comprising a lock for retaining the body in the second configuration.

5. A medical apparatus as in Claim 4, wherein the lock comprises an interference fit.

6. A medical apparatus as in Claim 4, wherein the lock comprises a compression fit.

7. A medical apparatus as in Claim 4, wherein the lock comprises a ratchet.

8. A medical apparatus as in Claim 4, wherein the lock comprises an engagement surface, which is movable between a first, disengaged configuration and a second, engaged configuration.

9. A medical apparatus as in Claim 4, wherein the lock is biased in a locked direction.

10. A medical apparatus as in Claim 4, wherein the lock is biased in an unlocked direction.

11. A medical apparatus as in Claim 1, further comprising a coating on the body.

12. A medical apparatus as in Claim 1, wherein the apparatus is movable from the implantation configuration to the remodeling configuration in response to proximal retraction of the forming element.

13. A medical apparatus as in Claim 1, wherein the apparatus is movable from the implantation configuration to the remodeling configuration in response to distal advancement of the forming element.

14. A medical apparatus as in Claim 1, further comprising an anchor for retaining the apparatus at a deployment site within a vessel.

15. A medical apparatus as in Claim 14, wherein the anchor comprises a distal extension of the apparatus.

16. A medical apparatus as in Claim 14, wherein the anchor comprises a friction enhancing surface structure for engaging the wall of the vessel.

17. A medical apparatus as in Claim 14, wherein the anchor comprises at least one barb for piercing the wall of the vessel.

18. A medical apparatus as in Claim 1, wherein the apparatus has an axial length of no more than about 10 cm.

19. A medical apparatus as in Claim 18, wherein the maximum cross sectional dimension through the apparatus is no more than about 10 mm.

20. An implant for positioning within a patient, comprising:

an elongate flexible body having a proximal end and a distal end, and a longitudinal axis extending therebetween, and first and second opposing sides extending along the implant body at least part way between the proximal end and the distal end, the first side having a fixed axial length, and the second side having an adjustable axial length;

at least a first forming element extending through the body to a distal point of attachment to the body; and

a detachable coupling on a proximal portion of the body, for removably attaching the body to a deployment catheter;

wherein manipulation of the first forming element deflects at least a first portion of the body away from the longitudinal axis.

21. An implant as in Claim 20, wherein the body comprises a tubular wall.

22. An implant as in Claim 21, wherein the tubular wall is substantially noncompressible along the first side.

23. An implant as in Claim 22, comprising a plurality of voids in the wall along the second side, thereby permitting axial shortening of the second side.

24. An implant as in Claim 23 wherein at least some of the voids comprise slots through the wall, extending generally transverse to the longitudinal axis.

25. An implant as in Claim 24 comprising at least 10 transverse slots in the wall of the second side.

26. An implant as in Claim 24 comprising at least 20 transverse slots in the wall of the second side.

27. An implant as in Claim 20, wherein the first forming element comprises an axially movable element.

28. An implant as in Claim 20, wherein the first forming element comprises a pull wire.

29. An implant as in Claim 20, further comprising at least a second forming element.

30. An implant as in Claim 29, wherein manipulation of the first forming element introduces a first curve in the body, and manipulation of the second forming element introduces a second curve in the body.

31. An implant as in Claim 20, wherein distal movement of the forming element causes axial elongation of the second side thereby bending the implant.

32. An implant as in Claim 20, wherein proximal movement of the forming element causes axial compression of the second side thereby bending the implant.

33. A deflectable implant, comprising:
an elongate flexible housing having proximal and distal ends and a central lumen extending therebetween, the housing being flexible in a lateral direction;
an axially extending column strength support in the implant;
at least a first deflection wire having proximal and distal ends extending along the housing, said wire being secured at a first point of attachment with respect to a distal portion of the column strength support; and
a lock at the proximal end of the housing for engaging the deflection wire to enable said deflection wire to retain a curve in the housing;
wherein the axis of at least a portion of the housing is displaced laterally in response to axial displacement of the deflection wire, thereby causing the distal end of said housing to bend out of the line of the housing longitudinal axis to form a curve in the housing.

34. A deflectable implant as in claim 33, wherein the support extends distally to a point within about 2 cm of the distal end of the housing.

35. A deflectable implant as in claim 33, wherein the support comprises a portion of the wall of the housing.

36. A deflectable implant as in claim 33, wherein the support is distinct from the wall of the housing.

37. A deflectable implant as in claim 33, comprising a second deflection wire, secured at a second point of attachment in between the first point of attachment and the proximal end.

38. A multizone vascular implant, comprising:
a tubular body;
a plurality of transverse voids on the tubular body to permit flexing in at least one plane;
at least a first, proximal zone and a second, distal zone on the body;
a first control wire for imparting curvature in the first zone; and
a second control wire for imparting curvature in the second zone.

39. A multizone vascular implant as in Claim 38, further comprising a third control wire for imparting curvature in a third zone.